REMARKS

Claims 1-8 are pending in the application. Claim 2 is amended, and claims 7 and 8 are newly added. Reconsideration of the rejection and allowance of the pending application in view of the following remarks are respectfully requested.

In the Office Action, the Examiner rejected claims 2-6 under 35 U.S.C. §112, 2nd paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter regarded as the invention. Specifically, the Examiner asserted that there was insufficient antecedent basis for the recitation "the winding cores" in claim 2. Applicants have amended claim 2, and submit that the amendment has overcome the rejection. Accordingly, Applicants request that the Examiner withdraw the rejection.

In the Office Action, the Examiner rejected claim 1 under 35 U.S.C. §102(e) as being anticipated by Miller et al. (U.S. Patent No. 6,461,759). Alternatively, the Examiner rejected claim 1 under 35 U.S.C. §103(a) as being unpatentable over Miller et al. Applicants respectfully traverse the rejections for at least the following reasons.

Applicants' claim 1 recites a battery including a wound electrode group. The wound electrode group includes an electrode stack that includes a lamination of a strip of positive electrode plate, a strip of negative electrode plate, and a pair of separators. When the electrode stack is wound, a difference L in length between an inner turn and an adjacent outer turn satisfies $L = 2t\pi + (W \times k)$, where t is a thickness of the electrode stack, W is a maximum diameter of a cross section of the wound electrode group, and k is a coefficient that is preset in accordance with expansion coefficients of active materials of the positive and negative electrode plates and is within a range of 0.005 to 0.05.

As described, for example, at page 15, line 22 to page 16, line 24 of Applicants' specification, this difference L results in a clearance that allows the electrode stack to stretch due to expansion of active materials of the electrode stack.

Miller et al. discloses a wound cell stack 20 which includes an electrode strip 10 having a plurality of bend regions 16. See, e.g., Figs. 1 and 7, and col. 3, lines 29-44 of Miller et al. In the Office Action, the Examiner, asserts that it is inherent that a difference L in length between an inner turn and an adjacent outer turn of Miller's electrode strip 10 satisfies the equation $L = 2t\pi + (W \times k)$, because the bend regions 16 of the electrode strip 10 are shortest towards the center of the electrode strip 10. Applicants respectfully disagree.

To establish inherency, extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999). Further, in relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art. *Ex parte Levy,* 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990).

Applicants respectfully submit that Miller et al. fails to disclose or suggest that expansion coefficients of active materials of the electrode strip 10 are taken into consideration when winding the electrode strip 10 and setting the lengths of the turns of the electrode strip 10. That is, there is no suggestion in Miller et al. of presetting a

coefficient k in accordance with the expansion coefficients of the active materials of the electrode strip 10, or using this coefficient k in winding the electrode strip 10 and setting the length of the turns of the electrode strip 10. Further, Applicants respectfully submit that there is no reason to believe that Miller's electrode strip 10 necessarily satisfies the equation $L = 2t\pi + (W \times k)$, k being the above-noted coefficient, as the lengths of the turns of the electrode strip 10 are controlled by the manufacturer of the wound cell stack 20, and Miller et al. has not suggested that the coefficient k should be a factor.

In view of the above, Applicants respectfully submit that Miller et al. fails to disclose or suggest a battery that includes a wound electrode group including an electrode stack, wherein when the electrode stack is wound, a difference L in length between an inner turn and an adjacent outer turn satisfies $L = 2t\pi + (W \times k)$, where k is a coefficient that is preset in accordance with expansion coefficients of active materials of positive and negative electrode plates of the electrode stack and is within a range of 0.005 to 0.05, as recited in Applicants' claim 1.

For at least these reasons, Applicants respectfully submit that the invention recited in Applicants' claim 1 is neither anticipated by nor obvious over Miller et al., and thus, request that the Examiner withdraw the rejections under 35 U.S.C. §102(b) and 35 U.S.C. §103(a), and allow this claim.

In the Office Action, the Examiner rejected claims 2 and 5 under 35 U.S.C. §103(a) as being unpatentable over Kageyama (U.S. Patent No. 5,658,683) in view of Wyser (U.S. Patent No. 6,190,794). Applicants respectfully traverse the rejection for at least the following reasons.

Applicants' claim 2 recites a method for manufacturing a wound electrode group wherein an electrode stack is wound around winding cores to form a wound electrode

group. The method includes, inter alia, setting a spacer between two adjacent turns of the electrode stack halfway in the process of winding the electrode stack.

Kageyama et al. discloses a method of making a cell. In the Office Action, the Examiner acknowledges that Kageyama's method does not use a spacer. However, the Examiner asserts that Wyser teaches a method for manufacturing a wound electrode which includes setting a spacer between two adjacent turns of an electrode stack. Applicants respectfully disagree.

Wyser discloses a prismatic battery having a spiral winding 2. Wyser discloses that positioning rods 31 are set in place when a winding operation of the spiral winding 2 is started, and are removed once the winding is finished. See, e.g., Figs. 2 and 4-6, and col. 4, lines 35-43 of Wyser.

Applicants respectfully submit that Wyser's positioning rods 31 are not set between two adjacent turns of the spiral winding 2. Rather, Wyser's positioning rods 31 are set within the innermost turn of the spiral winding 2. See, e.g., Figs. 4-6 of Wyser.

Furthermore, Applicants respectfully submit that Wyser's positioning rods 31 are not set halfway in the process of winding the spiral winding 2. Rather, Wyser states that the positioning rods 31 are set in place when a winding operation is started. See, e.g., col. 4, lines 35-37 of Wyser.

Thus, Applicants respectfully submit that the combined teachings of Kageyama et al. and Wyser fail to disclose or suggest a method for manufacturing a wound electrode group which includes setting a spacer between two adjacent turns of an electrode stack halfway in a process of winding the electrode stack, as recited in Applicants' claim 2.

For at least these reasons, Applicants respectfully submit that the invention recited in Applicants' claim 2 is not obvious in view of Kageyama et al. and Wyser, and thus,

request that the Examiner withdraw the rejection under 35 U.S.C. §103(a) and allow claim 2.

Applicants submit that claim 5 is also in condition for allowance, in view of its dependency from claim 2.

In the Office Action, the Examiner objected to claims 3, 4 and 6 for being dependent upon rejected claim 2, but indicated that these claims would be allowable if rewritten in independent form. Applicants wish to thank the Examiner for indicating that these claims include allowable subject matter. However, Applicants respectfully submit that these claims are in condition for allowance in their present form, as claim 2 is submitted to be in condition for allowance for the reasons discussed above. Therefore, Applicants respectfully request that the Examiner withdraw the objection.

Applicants have added new claims 7 and 8 for the Examiner's consideration. Claim 7 depends from claim 1, and recites that the difference L in length between the inner turn and the adjacent outer turn causes a clearance to exist between the inner turn and the adjacent outer turn. Claim 8 depends from claim 2, and recites that the spacer creates a clearance between the two adjacent turns of the electrode stack.

Applicants respectfully submit that these features are not taught by the applied prior art. Applicants submit that claims 7 and 8 are also in condition for allowance in view of their dependency from claims 1 and 2, and respectfully request that the Examiner allow these claims.

Based on the above, it is respectfully submitted that this application is in condition for allowance, and a Notice of Allowance is respectfully requested.

SUMMARY AND CONCLUSION

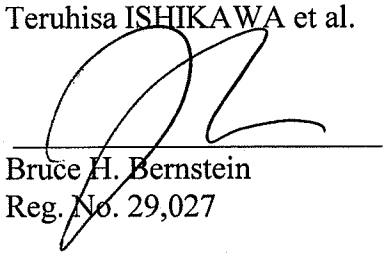
Reconsideration of the outstanding Office Action and allowance of the present application and all of the claims therein are respectfully requested and believed to be appropriate. Applicants have made a sincere effort to place the present invention in condition for allowance and believe that they have done so.

Any amendments to the claims which have been made in this amendment, and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

Should an extension of time be necessary to maintain the pendency of this application, including any extensions of time required to place the application in condition for allowance by an Examiner's Amendment, the Commissioner is hereby authorized to charge any additional fee to Deposit Account No. 19-0089.

Should the Examiner have any questions or comments regarding this response, or the present application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,
Teruhisa ISHIKAWA et al.



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